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ABSTRACT

To determine the influence of successful or unsuccessful competitive outcomes and small or large margins of victory/defeat on performance, pairs of female undergraduate students "competed" against each other in a dart tossing contest. False feedback about the outcomes and margin of victory/defeat led subjects to believe they were winning every time or losing every time by a margin either consistently large or small. Dependent variables included the number of practice throws made during a period prior to each trial, and point totals for a set of 10 performance throws on each trial. Analysis of covariance was conducted on the data from the postmanipulation trials (trials 2, 3, and 4) and on the data from the premanipulation trial (trial 1) as the covariate. Followup comparisons indicated: (1) The practice behavior of winners remained constant across trials while practice behavior of losers decreased significantly; and (2) When the margin of victory/defeat was small, there was no difference between winners and losers with regard to points scored, but when the difference was large, losers scored more points on trials 2 and 3 but the same number of points on trial 4. It appears that the margin of victory/defeat is a mediating variable in competitive situations. (Author/JD)

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EFFECTS OF COMPETITIVE OUTCOMES AND MARGINS OF VICTORY/DEFEAT ON PRACTICE BEHAVIOR AND PERFORMANCE QUALITY

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An experiment was conducted to examine the influence of successful or unsuccessful competitive outcomes and small or large margins of victory/defeat on two aspects of performance. Pairs of female undergraduates (N = 84) "competed" against each other in a novel, best-four-out-of-seven dart tossing contest that required them to throw with their nonpreferred hand at a target on the floor five feet away. Independent variables were manipulated by providing false feedback about the outcome and margin of victory/defeat on each trial of competition. This feedback led subjects to believe that they were either winning every time or losing every time by a margin that was either consistently small or consistently large. Dependent variables included the number of practice throws made during a five-minute practice period prior to each competitive trial and point totals for a set of 10 performance throws on each trial. Anlayses of covariance were conducted on the data from the postmanipulation trials (trials 2, 3, and 4) using the data from the premanipulation trial (trial 1) as the covariate. These analyses revealed a significant outcome x trials interaction for the practice data ($p < .04$) and a significant outcome x margin x trials interaction for the performance data ($p < .025$). Followup comparisons using Duncan's New Multiple Range Test indicated: (a) the practice behavior of winners remained constant across trials while the practice behavior of losers decreased significantly ~~across trials~~; (b) when the margin of victory/defeat was small, there was no difference between winners and losers with regard to points scored; when the margin of victory/defeat was large, losers scored more points than winners on trials 2 and 3 but the same number of points on trial 4. The practice effect is interpreted as consistent with learned helplessness phenomena. The effect on performance quality is consistent with studies finding performance-enhancing effects from short-term failure, but it implicates the margin of victory/defeat as a mediating variable in competitive situations.

(Presented at the annual meeting of the American Alliance for Health, Physical Education, Recreation, and Dance, Minneapolis, April, 1983)

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There is considerable ambiguity in the literature pertaining to the effects of initial success or failure on subsequent performance. Some studies have found that initial success facilitates subsequent performance (e.g., Feather, 1966, 1967; Miller, Brickman, & Bolen, 1975). Other studies, however, have shown that high rates of initial success may have detrimental effects on subsequent performance (e.g., Chaiken, 1971; Martens & White, 1975). In similar fashion, some studies have obtained decrements in performance related to initial failure (e.g., Feather, 1966, 1967; Dweck, 1975) while others have obtained enhancements in performance under the same sort of conditions (see Wortman & Brehm, 1975). The findings from noncompetitive and competitive situations appear to be equally ambiguous in this regard.

The present study was based on the premise that the quality of success or failure may be an important mediator of the effects of success or failure in competitive situations. More specifically, it investigated the notion that the margin of victory or defeat might interact with success and failure to influence behavior across a series of competitive trials against the same opponent. To test this proposition, both victory/defeat and the margin of victory/defeat were manipulated in a laboratory experiment. Two aspects of performance were then examined: (a) the amount of practice voluntarily undertaken by the competitors prior to each trial of competition and (b) the quality of performance on each competitive trial.

It was hypothesized that failure by a large margin would have a debilitating effect on behavior while failure by a small margin would have a facilitating effect on behavior (cf. the distinction made by Brickman,

Linsenmeier, & McCareins, 1976, concerning relevent success and irrelevent failure). Therefore, it was predicted that winners would practice more and perform better than losers when the margin of victory/defeat was large. Losers were predicted to practice more and perform better than winners when the margin of victory/defeat was small. Findings from the attribution literature suggest, however, that these effects may be most evident when competitors are oriented to perceive the cause of success or failure in an unstable manner.

Design

The experiment involved two levels of competitive outcomes (constant winning or constant losing) and two levels for the margin of victory/defeat (consistently small or consistently large). In addition, subjects were oriented to perceive their outcomes as due primarily to either natural ability or temporary effort. The effects of these manipulated variables were examined across four trials of competition (see Figure 1). Dependent variables included the number of practice throws made during a 5-minute practice period prior to each trial and the total number of points scored on a set of 10 performance throws on each trial. Undergraduate females (N = 84) participated in the experiment for course credit.

Procedure

Volunteers for the study were solicited on the basis of an advertisement that said participants would be competing for cash prizes ranging from $5 to $25. Subjects were told that there were two phases to the study and that during the first phase they would be competing against another female student in a novel, best-four-out-of-seven dart tossing contest. During the contest they would be throwing with their nonpreferred hand at a target located on the floor five feet away. This contest ostensibly constituted a "qualifying round" after which the winners would be eligible to compete for the cash prizes.

The orientation manipulation was then administered by stressing the importance of either natural ability or effort expenditure in determining whether they won or lost the contest. Subjects were then separated and remained separated for the rest of the study.

Each competitive trial included a 5-minute practice period during which the subject could practice as much or as little as she desired. Each trial also included a set of 10 performance throws at the target using the nonpreferred hand. The total number of points for these 10 throws were ostensibly compared to determine who had won each trial of competition. In actuality, however, the feedback given to the subjects was randomly determined rather than being based on actual scores. This feedback was given after each trial on a standardized form that indicated whether the subject had "won" or "lost" that particular trial, and what the margin of victory/defeat had been. The margin manipulation was accomplished by corcling one of the extremes on a 5-category scale that ranged from "very small margin" to "very large margin". Once assigned to a particular combination of the outcome and margin factors, a given subject always received the same feedback. Therefore, participants believed they had either won or lost the best-four-out-of-seven contest after the fourth trial. Subjects were then debriefed, and the advertised cash prizes were awarded on the basis of a lottery.

Results

Initial anlayses were conducted on the data from trial 1 using only the orientation factor as an independent variable and on the data from trials 2, 3, and 4 using all three manipulated variables and a trials factor. These analyses revealed no effects of the orientation variable either alone or in combination with the other variables. The data were, therefore, collapsed across the two orientations and the data from the postoutcome trials (trials

2, 3, and 4) were analyzed using the preoutcome trial (trial 1) as a covariate. These analyses revealed a significant outcome x trials interaction for the practice data, F (2, 158) = 3.36, p .04, and a significant outcome x margin x trials interaction for the performance data, F (2, 158) = 4.08, p .025).

Looking first at the practice effect (Figure 3), it can be seen that the number of practice throws made prior to the competitive trials remained relatively constant when subjects were winning but decreased substantially when subjects were losing. The margin factor did not exert a significant influence on practice behavior. Thus, the hypothesis that practice would be higher for winners when the margin of victory/defeat was large and higher for losers when the margin of victory/defeat was small was not supported. Instead, the data appear to be consistent with predictions that might be derived from Seligman's theory of learned helplessness (Seligman, 1975). This theory is essentially a reinforcement-oriented theory stating that individuals will simply cease to produce goal-oriented responses when they perceive a lack of covariation between these responses and the desired outcome. Since outcomes were indeed independent of actual responses in the present study, the decline in practice behavior exhibited by the losers could have been due to such a perception.

Moving now to the performance data (Figures 4 and 5). Again, it was hypothesized that the number of points scored would be higher for winners when the margin of victory/defeat was large and higher for losers when the margin of victory/defeat was small. A comparison of the performance scores of winners and losers when the outcome margin was small reveals very similar scores across

all of the postoutcome trials. Thus, the hypothesis that losers would outperform winners under these conditions was not supported by the data.

A comparison on the performance scores of winners and losers when the outcome margin was large reveals significant differences on trials 2 and 3. However, these differences were in a direction opposite to the prediction. Rather than losers performing worse than winners, the losers performed better than the winners on the first two postoutcome trials. By the third postoutcome trial, the performance of the win/large and lose/large groups was equivalent. While not along predicted lines, these data are consistent with studies that have found performance-enhancing effects from short-term failure (see Wortman & Brehm, 1975). They imply, however, that such an enhancing effect may only occur in competitive situations when the failure is clear-cut (i.e., when the margin of victory/defeat is large).

In sum, although the hypotheses guiding the present study were not supported by the data, there was evidence that practice behavior was differentially affected by competitive success and failure. There was also evidence that failure by a large margin had a temporary enhancing effect on the quality of competitive performance. Future research should attempt to replicate these effects and determine the circumstances under which they are most likely to occur.

References

Brickman, P., Linsenmeier, J. A. W., & McCareins, A. G. Performance enhancement by relevent success and irrelevent failure. Journal of Personality and Social Psychology, 1976, 33, 149-160.

Chaikin, A. L. The effects of four outcome schedules on persistence, liking for the task, and attribution of causality. Journal of Personality, 1971, 39, 512-526.

Dweck, C. S. The role of expectations and attributions in the alleviation of learned helplessness. Journal of Personality and Social Psychology, 1975, 31, 674-685.

Feather, N. T. Effects of prior success and failure on expectations for uccess and subsequent performance. Journal of Personality and Social Psychology, 1966, 3, 286-298.

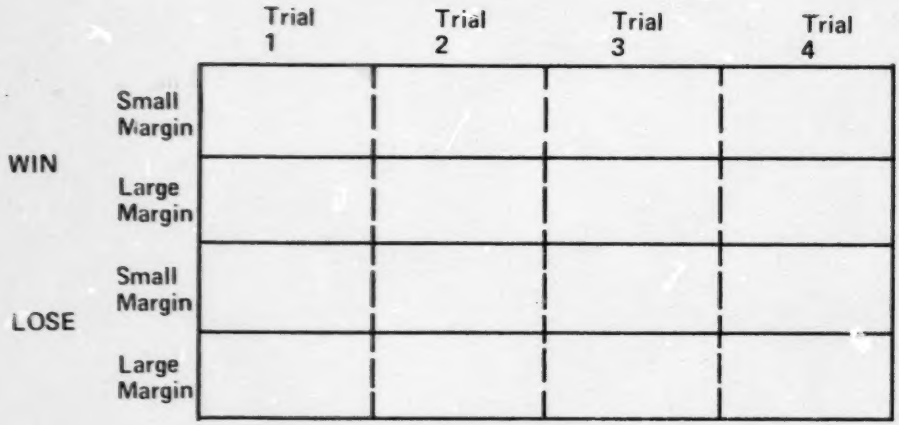
Feather, N. T., and Saville, M. R. Effects of amount of prior success and failure on expectations of success and subsequent task performance. Journal of Personality and Social Psychology, 1967, 5, 226-232.

Martens, R., & White, V. Influence of win-loss ratio on performance, satisfaction, and preference for oppontnts. Journal of Experimental Social Psychology, 1975, 11, 343-362.

Miller, R. L., Brickman, P., & Bolen, D. Attrubution versus persuasion as a means for modigying behavior. Journal of Personality and Social Psychology, 1975, 31, 430-441.

Seligman, M. E. P. Helplessness: On depression, development, and death. San Francisco: Freeman, 1975.

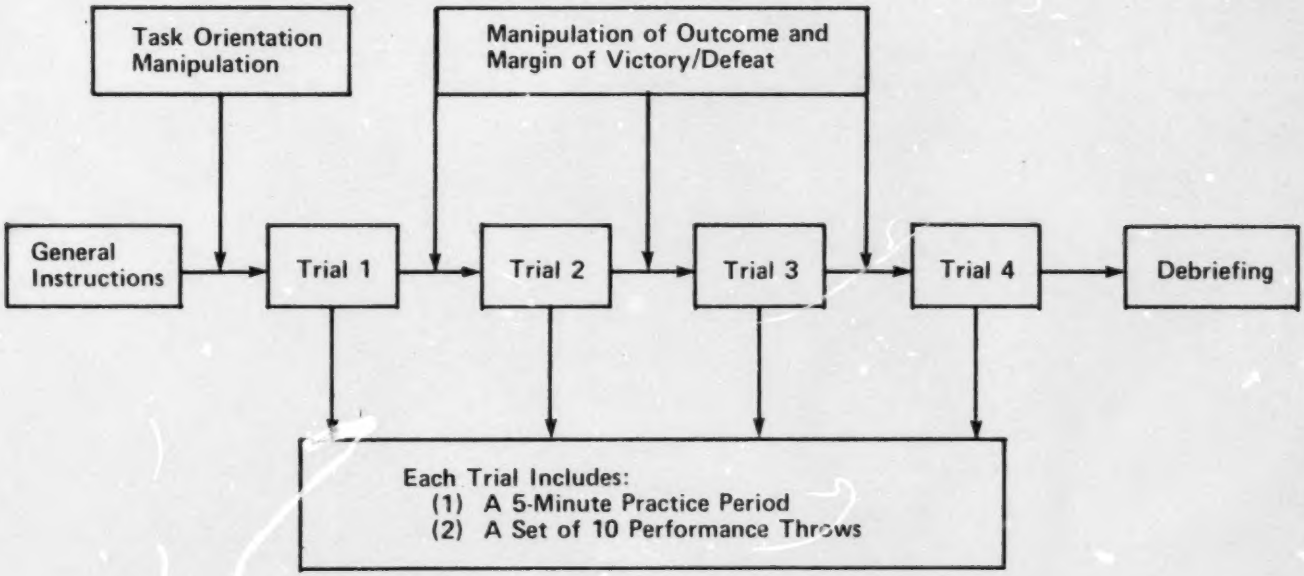
Wortman, C. B., & Brehm, J. W. Responses to uncontrollable outcomes: An integration of reactance theory and the learned helplessness model. In L. Berkowitz (Ed.), Advances in experimental social psychology (Vol. 8). New York: Academic Press, 1975.

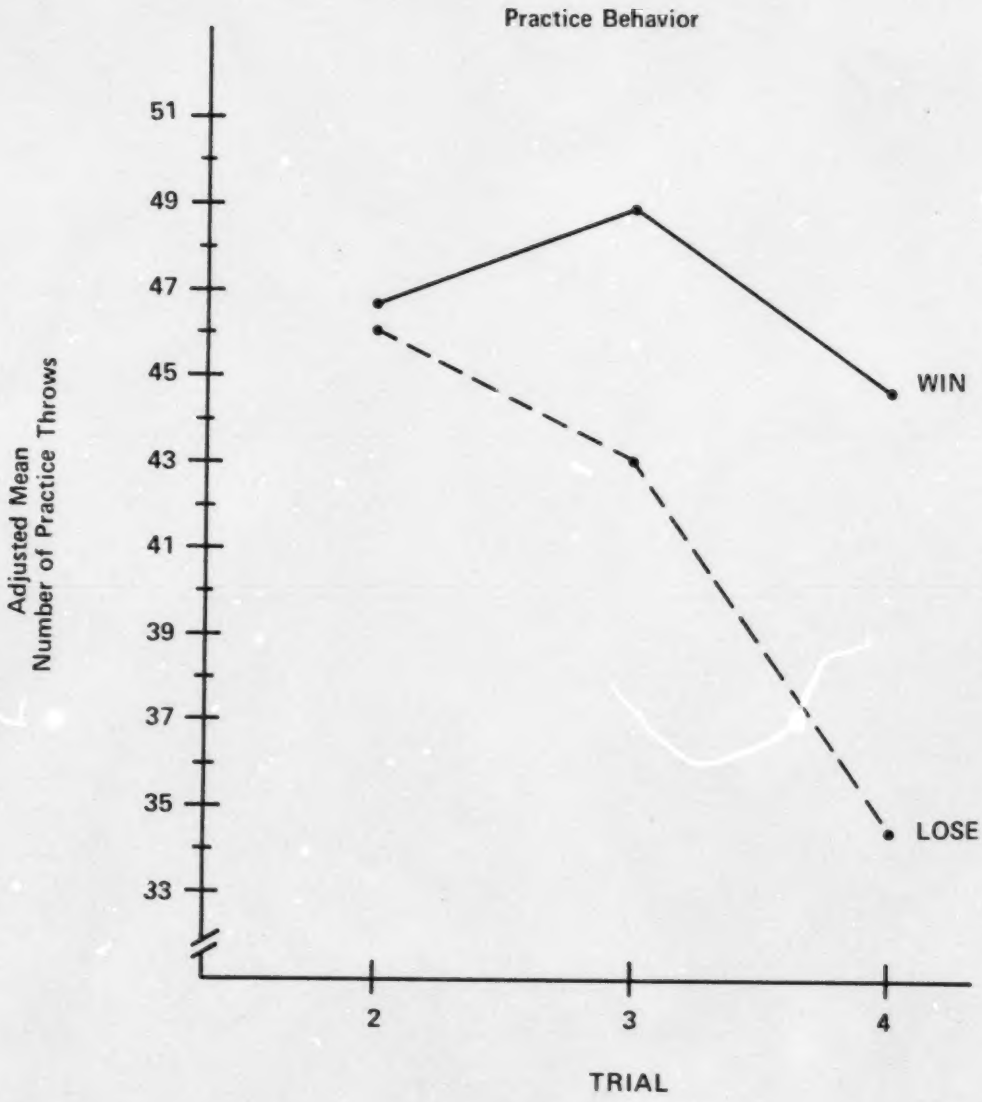


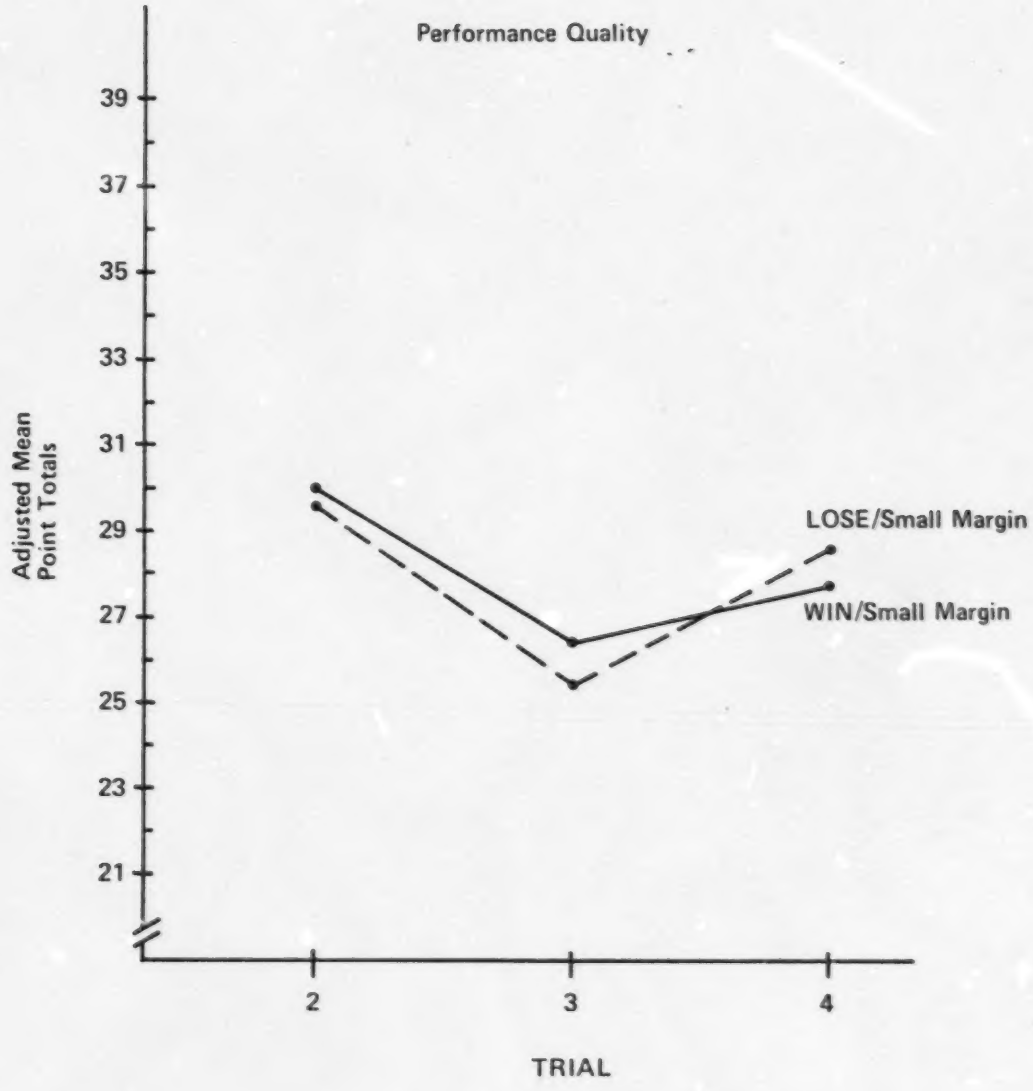
X 2 Orientations (Ability, Effort)

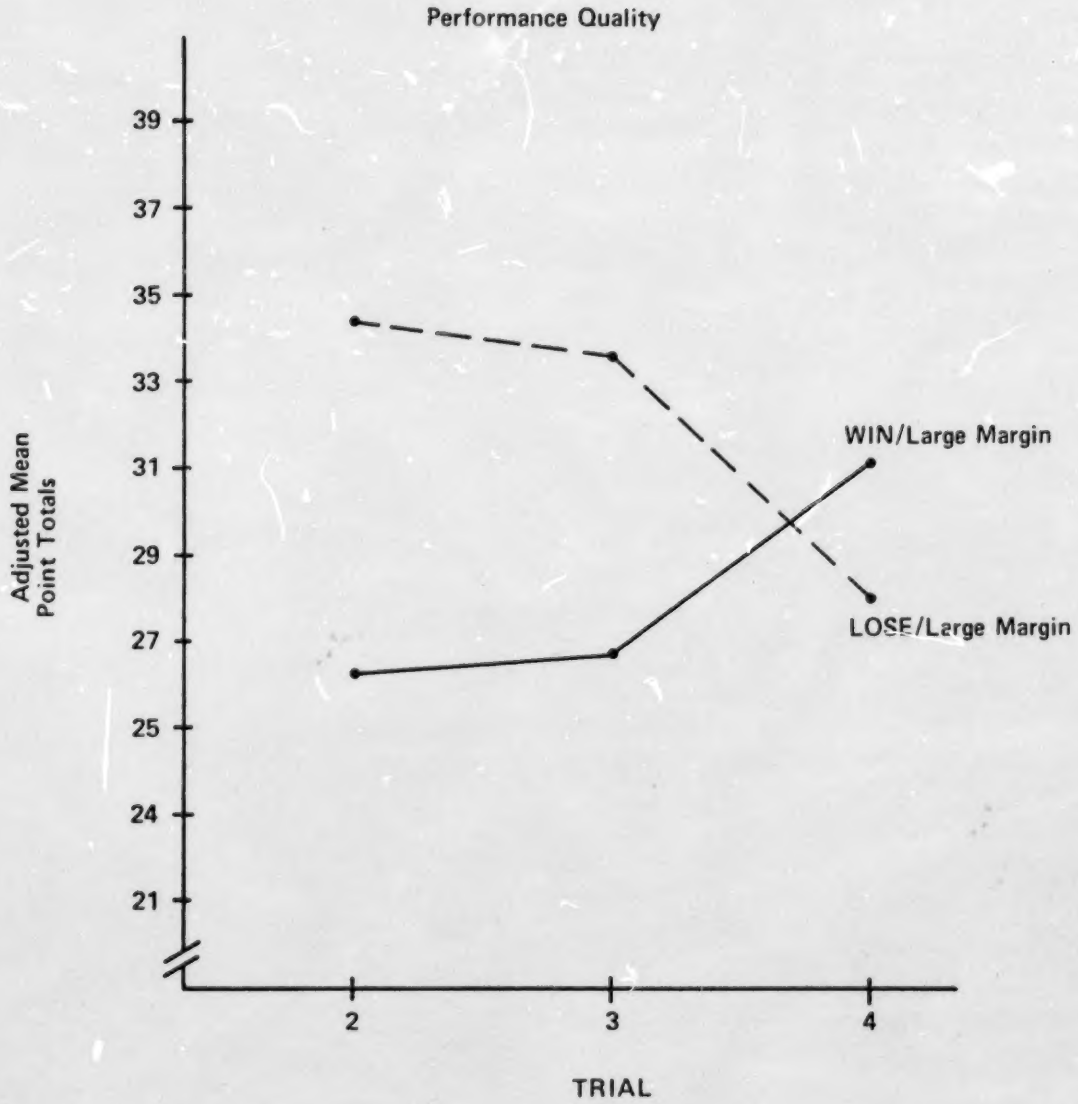
Dependent Variables

(1) Number of Practice Throws Prior to Performance
(2) Point Totals for the 10 Performance Throws


Task Orientation Manipulation
Manipulation of Outcome and Margin of Victory/Defeat
General Instructions
Trial 1
Trial 2
Trial 3
Trial 4
Debriefing
Each Trial Includes:
(1) A 5-Minute Practice Period
(2) A Set of 10 Performance Throws


Practice Behavior
Adjusted Mean
Number of Practice Throws
51
49
47
45
43
41
39
37
35
33
WIN
LOSE
2
3
4
TRIAL


Performance Quality
Adjusted Mean Point Totals
39
37
35
33
31
29
27
25
23
21
LOSE/Small Margin
WIN/Small Margin
2
3
4
TRIAL


Performance Quality
Adjusted Mean Point Totals
39
37
35
33
31
29
27
25
24
21
WIN/Large Margin
LOSE/Large Margin
2
3
4
TRIAL